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1909

JANUARY 1953

STANDARD ENGINEER'S REPORT

DATA

PRODUCT Chevron Starting Fluid

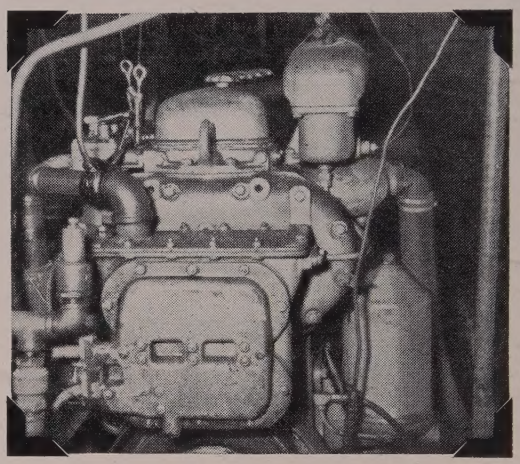
UNIT 160 H.P. diesel engine

CONDITIONS Zero weather — emergency service

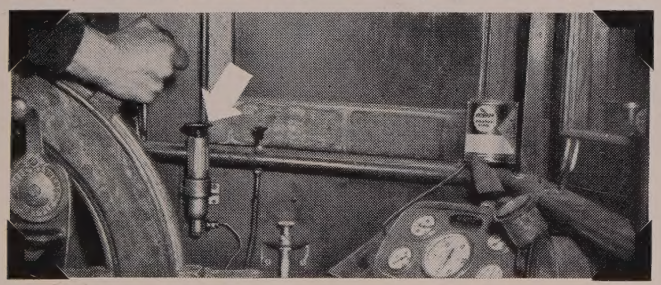
EQUIPMENT Permanent primer with atomizer on manifold

FIRM Elliott Bay Tugboat Co., Seattle, Wash.

Starting fluid ends excessive battery expense!

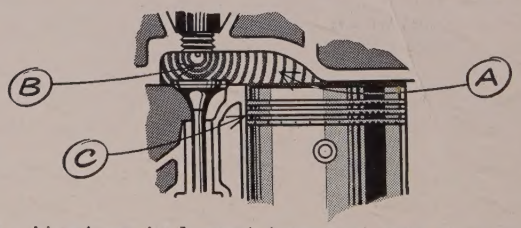


BEFORE USING CHEVRON STARTING FLUID, it took an electric heater and sometimes even a blowtorch to get this diesel boat engine started. Batteries ran down so fast that it was necessary to maintain special charging equipment. With Chevron Starting Fluid, the engine now starts on the first turn, even at zero temperatures. Needless expense has been eliminated since batteries now rarely require charging. In addition, time saving is from ½ to 2 hours per day.



PUNCTURING TOOL mounted in the wheelhouse (arrow), holds gelatin capsule of Chevron Starting Fluid. Fluid from the capsule is pumped through atomizers into the manifold. Chevron Starting Fluid is available in 3-pint cans, and 7- and 17-cc capsules. Your fluid supplier has complete primer equipment.

How CHEVRON Starting Fluid Starts Gasoline and Diesel Engines Instantly



A. Atomizes in lowest temperatures and provides powerful, easily ignited vapor in combustion chamber.

B. Pressure, or the weakest spark, fires mixture—turns engine and heats air for regular fuel mixture.

C. Contains lubricant and additives—inhibits cylinder wear and ice formation in primer equipment.

HOT NEWS for COLD ENGINES

FREE BOOKLET gives you more facts on Chevron Starting Fluid—shows where it should be applied in different type engines. Write or ask for it today.

CHEVRON STARTING FLUID

TRADEMARK REG. U.S. PAT. OFF.

STANDARD TECHNICAL SERVICE checked this product performance. For expert help on lubrication or fuel problems, call your Standard Fuel and Lubricant Engineer or Representative; or write Standard Oil Company of California, 225 Bush St., San Francisco.

STANDARD OIL COMPANY OF CALIFORNIA

The GLOBE

An International News File Compiled from FOREIGN REPORTS

Gothenburg, Sweden—Experiments with fishing nets made of spun nylon have been carried out since 1947 by the Swedish Institute of Fresh-Water Research at Drottingholm, reports an American consulate dispatch dated September 24 from Gothenburg. These experiments have evidently given satisfactory results and catches have generally been at least twice as large as when similar cotton nets were used.

For some months experiments with nets made of drawn nylon thread have been carried on in different lakes and streams in Sweden. The results of these tests have been excellent, but trials will continue up to the end of this year. When comparing the results obtained from nets made of cotton, spun nylon, and drawn nylon, they were in the ratio of 1, 2, and 7, respectively.

One difficulty found with the drawn nylon nets is that no machines are as yet available for tying the net knots, and for this reason the nets must be made by hand.

The experiments to date show that the possibilities of fishing with drawn nylon nets are undoubtedly most promising and results have been far above expectations.

Caracas, Venezuela—Venezuela fish canners are asking that the government act to prevent unusually large importations of United States sardines during the period before the revised trade agreement takes effect, states a September 15 American Consular dispatch from Caracas.

The canners are looking forward to the date when the duty of 2 bolivares per gross kilogram (27.3 U. S. cents per pound) can be applied to United States canned sardines. At the same time, they are complaining of oversupplies which they cannot market in the United States because of high duties.

Grimsby, England—Because Icelandic fishing trawlers have been denied the facilities of and prevented from landing their catches at the British ports of Hull and Grimsby, an Icelandic consular official at Grimsby has formed a company to undertake the discharge of fish by Icelandic trawlers in the United Kingdom. Recently Icelandic fishing trawlers have been prevented from landing their catches at Hull and Grimsby, England, because of retaliatory action taken by British trawlers interests against Iceland's claim to increased territorial waters. British trawler owners claim that the Icelandic extension of its territorial waters has denied them access to considerable fishing area regularly fished by British trawlers.

Although Icelandic fishery interests seem determined to land fish at the ports of Grimsby and Hull, British trawler owners seem equally determined to maintain the ban against Icelandic fishing vessels unloading fish at those ports.

The object of the new Icelandic company would be to act as agents in Great Britain to take care of and be responsible for the fish catches of Icelandic vessels. It is understood that application has been made to the National Dock Labour Board for the new company to be placed on the register of Employers of Labor at Grimsby, reports the American Embassy in London in a November 6 dispatch. Whether this action will bring about the threatened strike of British trawler owners in that port is debatable since the shortage of fish supplies at Grimsby has led to fears of unemployment and higher prices when supplies of frozen fish have been depleted.

It is reported that the British government is treating the entire matter with a sense of urgency as high-level meetings have been held and are in progress.

Copenhagen, Denmark—Exports of canned fish and frozen trout and fish fillets to the United States could be materially increased, according to the Danish Minister of Fisheries in a press interview on his return to Copenhagen from a short visit to the United States. The visit was made to explore the possibilities for increasing Danish sales of fishery products in the United States market, reports an October 29 dispatch from the American Embassy in Copenhagen.

However, it was emphasized that exports must be organized in such a manner as to insure regular deliveries and packing methods must be standardized and adapted to United States tastes and requirements.

The minister further stated that he would recommend the appropriation of government funds for the assignment of a fisheries attache to the United States, and that he would discuss the planning of suitable export promotion activities with Danish representatives of the fishing industry and trade as soon as he has completed preparation of a report on the results of his study.

Official Danish trade statistics reveal a steady and material increase in Danish exports of fishery products to the United States in recent years.

Frozen trout and fish fillets and canned fish exports to the United States the first eight months this year amount to 9,700,000 kroner (US$1,401,700) as compared to 4,700,000 kroner (US$697,220) for the same period last year. Detailed statistics by type of products are available only on an annual basis.

However, preliminary data for the first six months this year indicate that frozen cod fillets represented the largest individual item followed by frozen brook trout, canned fish (principally brisling sardines), and frozen plaice fillets.

San Jose, Costa Rica—The Costa Rica government is planning to develop a more significant shrimp factory and has licensed a California firm to fish for shrimp on the Pacific side of its coastal waters, reports a November 14 dispatch from the American Embassy at San Jose. This company's operations will be largely exploratory and they will report to the Costa Rican government in detail their findings on tides, size and location of hauls, size of shrimp, etc.

The California firm will pay an export tax of US$12.00 for each metric ton of shrimp caught and will be permitted to fish in Costa Rican Pacific territorial waters with the exception of Nicoya and Dulce Gulfs.

The Costa Rican government hopes to license more shrimpers under similar arrangements in the future.

PAN-AMERICAN *fisherman*

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JANUARY 1953

"NEWSmagazine of PAN-AMERICAN FISHERIES combined with the magazine TUNAfisherman"

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About this Issue . .

Doctor Wilbert M. Chapman, former member of the State Department, and a recognized authority on foreign relations, continues this month exploring the Regime of the Territorial Sea. This interesting article is one we felt was of special interest to those engaged in commercial fishing in foreign waters. See Page 4.

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Gerald V. Howard, senior scientist of the Inter-American Tropical Tuna Commission, brought us an article in December on the bait studies being conducted in the principal baiting locations which affect the Southern California tuna fishing fleet. It is completed in this issue. See Page 6.

•

The public relations agency for Superior diesels sent the release covering the landing of the West Coast tuna clipper Sun Jason at Gloucester, Massachusetts, last year with the first load of Pacific caught tuna ever to be unloaded at an Eastern seaport. A significant feature of this article may be the fact that Massachusetts regulations do not seem to be as strict as those of California where sizes of fish are concerned. See Page 8.

Editorial

THE CO-OP THE NEGOTIATIONS and THE TARIFF

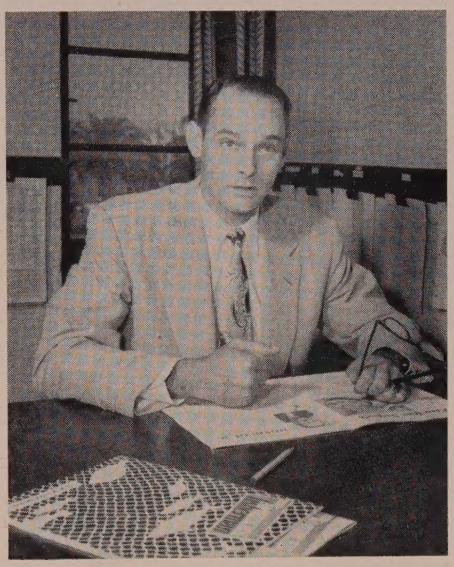
One of the most difficult things about dealing with the problems that have beset the tuna industry during the last two or three years is that they all hang together. Try and solve the import problem and you get snarled up in Latin American bait problems. Try and solve the reject problem and you get tangled up with the price of fish. Try to work out the price of fish and you get messed up with the proportion of skipjack and yellowfin in the catch. Try and figure that out and you get bothered about how much albacore gets caught next year. Then you are up against what the albacore catch in Japan will be next year, and you are back to the import problem, which is where you started. Change any one of the conditions under which the clippers operate and you affect sooner or later all of these problems, and more too.

So it is with the Coop. A good many people in the tuna industry have been involved in negotiations during November and December, and the Board of Directors of the Coop spent all of the month of October preparing for the negotiations. Every man jack in the industry will be affected by the outcome of these negotiations. This responsibility has weighed heavily on the Board members.

How do these negotiations affect the tariff? In the following way.

The Canners took their import problem to Washington for help. They got turned down by the Tariff Commission. The essential reason they got turned down was that the price of canned tuna had firmed up during the year and the sales of the canned product had increased a little. Therefore, the Tariff Commission said the canners were not in trouble any more from imports.

Yet the tuna industry was in trouble. What had happened was that during the year the whole burden of the import problem had shifted to the shoulders of the tuna producers, the fishermen and the boat owners. While the canners price for his product had firmed



during the year, the producers price for his product—raw tuna—had dropped. While the canners volume of sales for his product had increased a little, the producers volume of sales for his product had decreased again.

The producers had also gone to Washington with their problem. They also got defeated, by a small margin indeed, but no help was forthcoming.

Therefore, the producers had to try and even out the pressure of the import problem, and shift some of the burden back on the canner's shoulders again.

The producer is right up against it. At the volume of business and the price of tuna during 1952, he lost money. The easy way out of this was to raise the price of tuna. The other way was to raise the volume he could produce. If he raised the price by very much he only encouraged imports by giving the Japanese producer a larger profit margin.

The biggest thing that could be done to help the producer without helping the foreigner in this market was to increase the efficiency of American boat operations without raising the price much. In the past two years imports have forced the boats to fish most heavily in the winter when fish were scarce and fish lightest in the summer and early fall when fish were abundant.

The Coop decided that the best way out of this maze of problems was to start changing back to the old ways—fishing hardest when fish were most abundant, and fishing lightest when fish were scarce. This combined with a little raise might at least keep the fleet from losing money again next year, and keep the fleet partially solvent against the day when some tariff help could be had on the import problem.

This is the heart of what has been negotiated: Keep the price as low as possible, raise the volume the boats are permitted to catch as much as possible, and try to get pack as close as possible to fishing hardest when fish are easiest to catch.

When the industry treads the very narrow line that is left between the producers losing money and not forcing the canners to the wall, the walking is not easy. The industry will not be in a safe position until the import problem is solved in Washington, but perhaps by shifting some of the burden of that problem to the canners shoulders again the industry can present a united front in Washington and get somewhere.

The boat owners and fishermen have been forced into the position of let's all swim together or let's all sink together and get it over with.

W. M. Chapman
Director of Research
American Tunaboat Association

Territorial Sea

By

DR. W. M. CHAPMAN

EDITOR'S NOTE: Space limitations prevented us from carrying this manuscript complete in the December issue. Doctor Chapman's interpretation of the articles set forth at the end of each of the two series discussed should perhaps have preceded each article for the best definition, however since some of the articles seem to be self-explanatory we arbitrarily placed them at the end.

Articles 9 and 10 regarding the manner of measuring inland waters and the territorial seas around islands and groups of islands are of particular importance to the tuna industry. Not only do we fish in the vicinity of all islands in the Eastern Tropical Pacific but we may want to do so in the future around the islands of Polynesia. Furthermore, there are many places where we fish that are relatively close to some island or group of islands. These two articles put together form a system for handling the territorial sea around islands that would be quite workable as far as the tuna industry is concerned.

There are two possible practices on this subject which would be damaging to the tuna industry: 1. The inclusion of all islands of an archipelago, no matter how far distant from one another, in an envelope inside of which all area would be inland waters, and 2. Using an off-shore island, or islands, to enclose a large body of water between it and the mainland as inland waters. These two articles, plus article 11 defining what is an international strait, seem to provide workable compromises on these vexing points.

Articles 14 through 20 define the right of passage which a foreign flag vessel has through the territorial sea and the duties of both the vessel and the coastal state with respect to that passage. This comes close to being the most important subject dealth with in this report so far as a tuna fisherman is concerned.

Every purpose which being close to land serves for a freight vessel applies more aptly to a fishing vessel, for the fishing vessel is the smaller of the two and its navigation is the more easily affected by the hazards of sea conditions. These articles as drafted appear to pretty well serve the purpose of the tuna fishermen as well as of other seamen.

This draft agreement is not completely satisfactory as far as the tuna fisherman is concerned. On the other hand if this agreement were adopted lock, stock and barrel by all the countries of the Eastern Tropical Pacific without the change of a comma, the tuna fisherman would be better off than he is now, because he would know definitely what his rights were and he could adjust his practices to conform to those rights.

At the present time the United States Government tells us what our rights are under traditional international law as understood by our Government. Other countries in the area we work understand that our rights under international law are quite different than those established for us by our Government. For the most part no effort is made by these other countries to enforce their extended claims. But once in a while they do and it is always the tuna fisherman who gets caught, pays the fine and loses fishing time.

There is probably not a tuna clipper registered in San Diego which has not transgressed some such claim during the past year, or will not do so during the next year. The whole fleet, or very nearly all of it, is thus guilty of breaking the law of some country, but innocent of any transgression under the policy of its own Government. How it stands with respect to international law nobody appears to know. The result is anarchy, and the body politic acts astounded when a fisherman talks or acts like an anarchist. What is he to do? What law applies to him?

It is the responsibility of a Government to inform a citizen as to his rights with respect to the actions of another government, and then to protect him from other governments in his exercise of those rights. That is one of the main reasons we hire a government to work for us in the international field.

With respect to the rights of its citizens on the high seas or in the territorial sea of another country the United States Government in recent years has adopted the policy that if it looks long enough in the opposite direction this nasty problem will go away and stop being such a nuisance. Unfortunately the problem just gets worse.

The United States has become the primary naval power in the world. Whether or not the United States likes the role it is the responsibility of such a naval power to protect the freedom of the seas and to eliminate piracy. Anglo-Saxon thinking will not permit of this except under law. It is high time that the United States adopted a responsible position with respect to bringing under law the present anarchy which exists in the regime of the high seas and of the territorial sea.

No better method suggests itself than for the United States Government to call a conference of maritime nations for the purpose of adopting by treaty among them a code of laws which will apply to high seas and the territorial sea. The United States could do much worse than to go into such a conference with Mr. Francois' draft agreement as the instructions to its delegation.

Article 9
Islands

Every island has its own territorial sea. An island is an area of land surrounded by water, which is permanently above high-water mark.

Article 10
Group of islands

With regard to a group of islands (archipelago) and islands situated along the coast, the ten-mile line shall be adopted as the base line for measuring the territorial sea outward in the direction of the high

(Continued on page 11)

EBB 'n FLOW

JAPANESE COMMERCIAL FISHING LIST

A trade list of Japanese commercial fishing companies and fish exporters has been issued by the Commercial Intelligence Branch of the Office of International Trade. Copies of *Commercial Fishing Companies and Fish Exporters—Japan*, may be purchased at a cost of $1.00 per copy by firms in the United States, from the Office of International Trade, U. S. Department of Commerce, Washington 25, D. C., or from local field offices.

CHILEAN COMMERCIAL FISHING LISTS

A trade list of Chilean commercial fishing companies and fish exporters has been issued by the Commercial Intelligence Branch of the Office of International Trade. Copies of *Commercial Fishing Companies and Fish Exporters —Chile*, may be purchased at $1.00 each by firms in the United States from the Office of International Trade, U. S. Department of Commerce, Washington 25, D. C., or from that department's field offices.

FISH MEAL FOR HUMAN FOOD

Although fish meal is used in most countries only as a food supplement for animals and is highly successful when fed to cattle, pigs, and poultry, the South African government is planning to introduce it into the nation's bread, and the idea has been received with enthusiasm by all parties of the House of Assembly, according to the September 6 issue of *The Fishing News*, a British fishery periodical.

The natives do not get enough protein, vitamins, minerals, and fats in their diet, and their health suffers accordingly. To combat this the South African government intends to introduce into bread a small proportion of a highly purified and palatable white fish-meal flour.

Announcing this development, the Minister of Health said that successful experiments at Capetown, Pretoria, and Witwatersrand Universities had indicated that the addition of fish meal to bread and mealie meal would go far to curing tuberculosis and blindness among South Africa's population. The minister added: "I am now in a position to feed 20,000 children in institutes of my department, and we will give them this food."

FROZEN FISH REPORT

Frozen Fish Report, September 1952, C.F.S. No. 793, issued recently by the Service's Branch of Commercial Fisheries, gives by species and are the stocks of frozen fishery products held on September 1, 1952, domestic freezings during the month of August, and comparative data. In addition, imports of groundfish (including ocean perch) fillets for August 1952 are included, together with a summary of Canadian freezings and cold-storage stocks of fishery products for the same period as the U. S. data.

Stocks of fresh-frozen fishery products held on September 1, 1952, by firms reporting to the U. S. Fish and Wildlife Service, totaled 183,826,389 pounds—22.2 million pounds more than were held on the same date in 1951, and 7.6 million pounds more than were in storage on August 1, 1952.

The Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C., will mail free copies of this publication (C.F.S. 793) upon request.

VENEZUELA CANNED FISH

Venezuelan fish canners are asking that the government act to prevent unusually large importations of United States sardines during the period before the revised trade agreement takes effect, states a September 15 American consular dispatch from Caracas.

The canners are looking forward to the date when the duty of 2 bolivares per gross kilogram (27.3 U. S. Cents per pound) can be applied to United States canned sardines. At the same time, they are complaining of oversupplies which they cannot market in the United States because of high duties.

The canners want the government to negotiate agreements with the countries of the Far East for Venezuelan canned fish. They believe they can supply fish to Indonesia, the Philippines, and other densely-populated Far Eastern countries. In fact, their only hope for a good market lies in that region, according to the canners.

FISH AND SHELLFISH SURVEY

Fish and Shellfish Preferences of Household Consumers—1951, Fishery Leaflet 408, containing "Part II—Regional Summary," is now available. Part II summarizes for four regions of the United States the answers of 2,473 persons to questions about the fish and shellfish preferences of their households, asked them in an October 1951 survey. The four regions covered, together with the number of respondents in each region, are: Northeast 685, North Central 632, South 734, and West 322. The publication is the second in a series of summaries being issued as fishery leaflets. Subsequent issues will give analyses on a rural and urban basis, income basis, etc.

The survey was conducted by the U. S. Fish and Wildlife Service. Field work was done by a private research firm under contract with the service. The respondents were asked 52 questions some with sub-parts. The questions pertained predominantly to their preferences and desires with respect to fresh and frozen fish and shellfish, although canned and cured fish were covered in a few instances. Information on frequency of use is given, such as days served, seasons served, kind served, etc.; preferences of fresh versus frozen fish and shellfish; particular preferences with respect to packaging, grading, cooking, cuts preferred, availability of frozen fish and shellfish; and mail order business for frozen fish and shellfish. This information is summarized regionally in this Part II. The initial publication in this series, fishery Leaflet 407, *Fish and Shellfish Preferences of Household Consumers*—1951, "Part I—National Summary," gave summary data for the United States as a whole.

The work sheets containing the tabulated data for this particular survey are arranged so that various types of summaries may be readily obtained. Only those of general interest will be published by the service. Anyone interested in studying these work sheets may inspect them in the office of the branch of Commercial Fisheries, U. S. Fish and Wildlife Service, Washington, D. C.

Free copies of Fishery Leaflets 408 and 407 (Part II and Part I) are available from the Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C.

(Continued on page 10)

Tuna Commission and the Bait Fishes

Part 2. The first part of this article appeared in the December issue, in which a map of the principal Anchoveta Baiting locations was shown.

By

GERALD V. HOWARD

Senior Scientist
Inter-American Tropical Tuna Commission

We are making a good start on finding answers to some of these questions for the anchoveta, thanks largely to the tuna clippers which are continually collecting bait samples for us. Crew members of these boats place a random scoop of fish in a five gallon liver can with a label showing the baiting place and date. These samples, consisting of 100 to 400 fish, are frozen aboard and collected by our representative when the vessel returns to port. With perhaps fifty or more boats making these collections, we are getting fairly continuous samples from the major baiting localities. These collections are providing valuable information concerning rate of growth, age composition of the catches, time of spawning, age at maturity and anatomical or racial characters. A larger number of samples, would, however, speed our investigations, and it is hoped that more vessels will assist in this task.

Separation of Anchoveta Populations

From the samples collected by the the fleet we are obtaining information on the degree of independence of the populations of different baiting areas. Stocks of the same species through evolution over long periods of time or as a result of different environments—and sometimes as a combination of both.

Characters which may be examined include the number of vertebrae, gill rakers and fin rays. For the anchoveta, we find that those in Almejas Bay have a significantly higher average number of vertebrae than those found in the other major baiting areas, but there does not yet appear to be any difference in this among the fish in the remaining localities.

First examination of the fin ray counts on anchovetas indicates that the average number of rays making up the anal fin is the same for fish taken at Panama and Guayaquil. Similarly, the counts are the same for Guaymas, Ahome Point (both in the Gulf of California) and Fonseca, but these are different from the Panama-Guayaquil group. Almejas Bay fish, again, are different from the Guaymas, Ahome and Fonseca fish. This indicates that there are at least three separate population groups.

We have finished making gill raker counts, but the analysis required to detect the difference between fish of different localities is more complicated than that for the vertebral and fin ray

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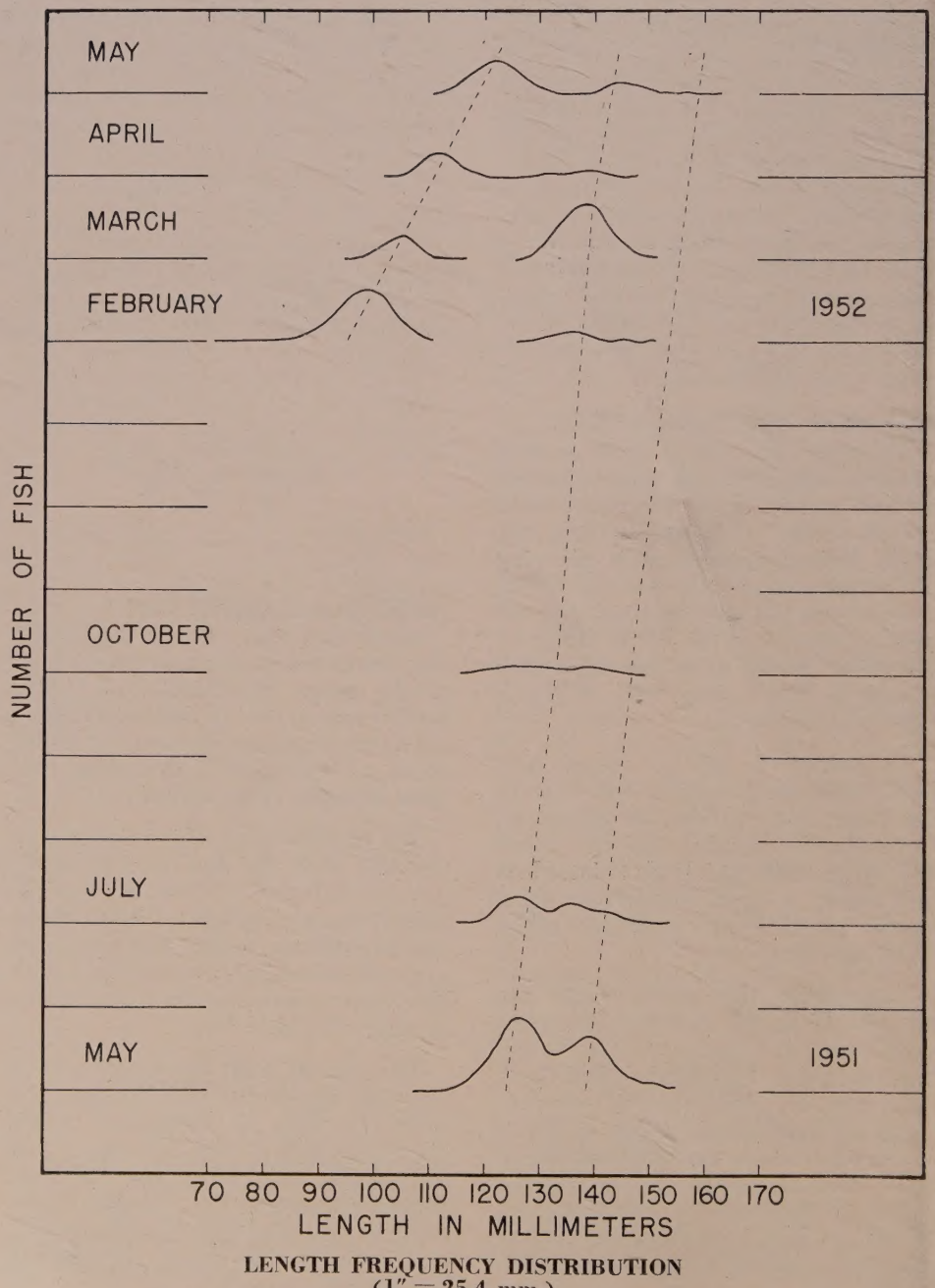


LENGTH FREQUENCY DISTRIBUTION
(1″ = 25.4 mm.)

Know Your Seafoods

LARGE VARIETY OF DAILY MENUS

THE TUNA RESEARCH FOUNDATION

NUTRITIOUS TUNA CHOWDER

AS FIRST COURSE OR MAIN COURSE

Bring on the soup! And what could be more appropriate than a Tuna Chowder bubbling with healthful chunks of tuna blended with tasty vegetables? As a first course or as a meal in itself, supplemented with crackers and perhaps a tossed salad, this hearty protein-packed chowder will appeal to every member of the family.

TUNA CHOWDER
(Makes 6 servings)

- 2 7-ounce cans solid-pack tuna
- 1 cup diced potatoes
- 1 cup stewed tomatoes
- 1 medium-sized onion, sliced
- ½ teaspoon celery seed
- 2 cups boiling water
- ¼ cup butter or margarine
- ¼ cup all-purpose flour
- 3 cups milk
- 2½ teaspoons salt
- ¼ teaspoon freshly ground pepper
- Finely chopped parsley

Drain tuna and separate into large pieces with fork. In a large saucepan, combine potatoes, tomatoes, onion, celery seed and boiling water. Bring to a boil over high heat; reduce heat and continue cooking about 20 minutes, or until potatoes are tender. Add tuna.

Meanwhile, in another saucepan, melt butter or margarine over low heat; add flour and blend. Gradually add milk and continue cooking until thickened and smooth, stirring constantly. Add salt and pepper. Combine white sauce and tuna mixture; mix well. Sprinkle with chopped parsley and serve piping hot.

TUNA CHOWDER

TUNA SOUFFLE
(Makes 4-6 servings)

- 2 teaspoons salt
- 1 cup boiling water
- 1 cup light cream
- ½ cup finely chopped celery
- ¼ cup quick-cooked tapioca
- ⅛ teaspoon nutmeg
- Dash freshly ground pepper
- 4 egg yolks, well beaten
- 1 6½-ounce can chunk-style tuna, drained
- 4 egg whites, beaten stiff

Add 1 teaspoon salt to rapidly boiling water; stir in light cream and celery. Gradually add tapioca and cook about 8 minutes or until tapioca is clear, stirring constantly. Stir in nutmeg and pepper; allow mixture to cool.

With a fork, separate tuna into small pieces. When tapioca mixture is cool, add egg yolks, tuna and remaining 1 teaspoon salt. Beat until well blended. Fold in beaten egg whites and turn into buttered 1½ quart casserole. Set in pan of hot water. Bake in moderate oven (350°) 50-60 minutes, or until knife inserted in center comes out clean and souffle is golden brown. Serve immediately with Quick Tomato Sauce.

To make Quick Tomato Sauce: In a saucepan, combine 1 10½-ounce can condensed tomato soup, dash Worcestershire sauce and salt and pepper to taste. Bring to a boil and serve over souffle.

"ALASKA SEAFOOD RECIPES"

A revised edition of "Alaska Seafood Recipes" from the Fishery Products Laboratory, Ketchikan, is now available. After being out of print for several years, the new edition of this popular booklet is back with all the old favorite recipes and many added new ones. An attractive color cover, information on purchasing fish, and notes on the various species of fish have been added to make the booklet a handy addition to the homemaker's cookbook file. All recipes have been tested by the home economist at the Ketchikan Laboratory. Included in the 80-page booklet are over 100 recipes for fish and shellfish, outdoor fish cookery, sauces and stuffings, and kelp pickles.

The booklet has been published jointly by the Fisheries Experimental Commission, the Agricultural Extension Service, and the Alaska Development Board. Copies are being distributed in Alaska by the Fishery Products Laboratory, 622 Mission Street, Ketchikan, Alaska, the Agricultural Extension Service, College, Alaska; the Alaska Development Board, Box 50, Juneau, Alaska. The Laboratory is mailing copies to all those who have requested a cookbook during the time it has been out of print; however, if your copy is not received in the near future a postcard request should be sent to one of the above agencies.

Recipes Kitchen-Tested in the Home Economics Department of . . .
Theodore R. Sills Company, 137 East 57th Street, New York 22, N. Y.

THE Sun Jason LANDING

Fishing vessels are no novelty on the Gloucester, Mass., waterfront, but when the Tuna Clipper Sun Jason docked there recently, hundreds of townspeople took time out to inspect her.

The Sun Jason bore the first load of Pacific tuna ever unloaded at Gloucester. Its 600,000 pound cargo, valued at $100,000, was the largest haul of fish ever landed at any Atlantic port.

The 132-foot auxiliary fishing boat, powered by an 840 horsepower Model 60 Superior Marine Diesel, has a loaded cruising speed of 10½ knots. The Sun Jason had traveled 117 days, logging 2870 miles to Gloucester, after leaving its home port, San Diego, Calif. The tuna were caught off the west coast of South America in 45 days. After passing through the Panama Canal, the ship traveled non-stop to Gloucester in nine days.

Capt. Lazaro Massa, a pioneer tuna fisherman, said his clipper had cruised to a point off Chili without finding many fish. However, on returning north, he and his 13-man crew made a record-breaking haul off Colombia.

Of the fish, 400,000 pounds ran from 10 to 12 pounds each, while the remainder were big fellows averaging 175 pounds. The 12-pound fish were caught on a single pole. For the big fish, three men handled poles attached to a single line. Each man wore a heavy belt in which the butt of the pole rested and had knee pads to protect him from the jolt when a fish strikes.

The working section occupies the rear two-thirds of the ship. Here are live bait tanks and the platforms from which the men fish. The pilot house, crew quarters, engine room, and other facilities are forward.

The Superior Diesel Engine is of the four cycle, cold starting, mechanical injection type, with a 12 inch bore and 15 inch stroke. The fuel system is of the solid injection type and engine lubrication of the force feed, dry sump type. The spray nozzle valve is operated hydraulically by the pressure of the fuel being delivered by the injection pump through high pressure connecting lines. The oil cooled pistons have four compression rings and three oil regulating rings.

Despite the 117 day trip, no engine maintenance was required.

Two Chicago Pneumatic Diesel Generator units, each of 170 horsepower furnish electrical and refrigeration power. A Wisconsin air-cooled gasoline engine and compressor unit is available as standby equipment.

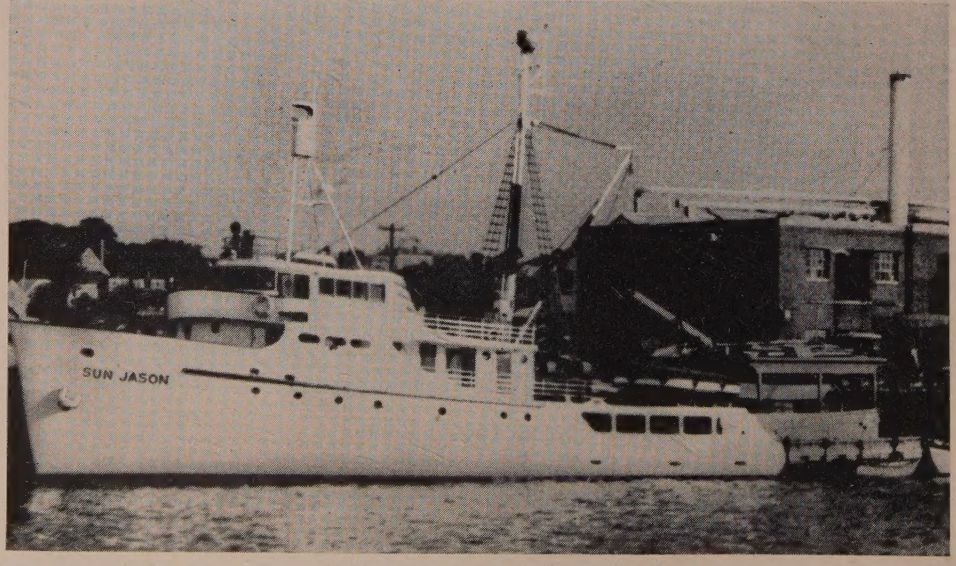
The ship is equipped with a Kohlenberger refrigeration system. Electric controls, switch boxes, and rheostat control boxes are by Allen-Bradley and Cutler-Hammer.

All gages in the engine room are by James P. Marsh.

The pilot house is equipped with Western Electric pilot house engine controls, Allen Automatic Pilot electric steering, Stetston-Ross Machine Co. steerer, Lionel Corp. compass and compensating binnacle, and Allen-Bradley electric controls on the engine room signal system. Other equipment includes a Fathometer depth sounder, Raytheon radar, National radio, and three Pacific Electronics radiotelephones.

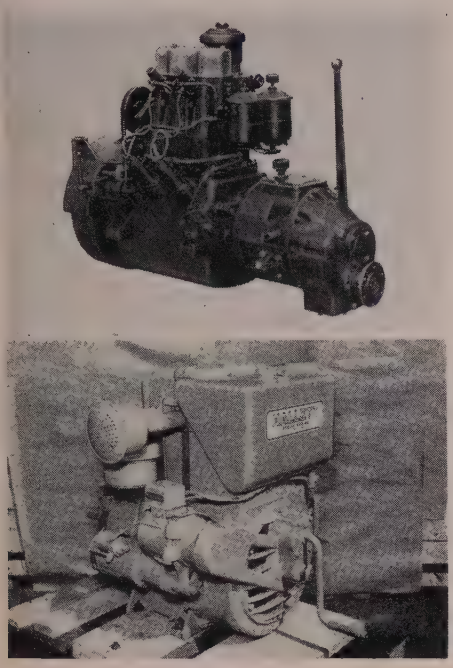
Deck equipment includes a Johnson Foundry and Machine Co. automatically controlled anchor hoist, and a Campbell Machinery Co. remote control fish hoist. Rubber hose is by the Goodrich Rubber Co.

The trip was handled through the Tuna Sales Management Co., Moss Point, Miss. The tuna were sold to Davis Bros. Fisheries Co., Gloucester.



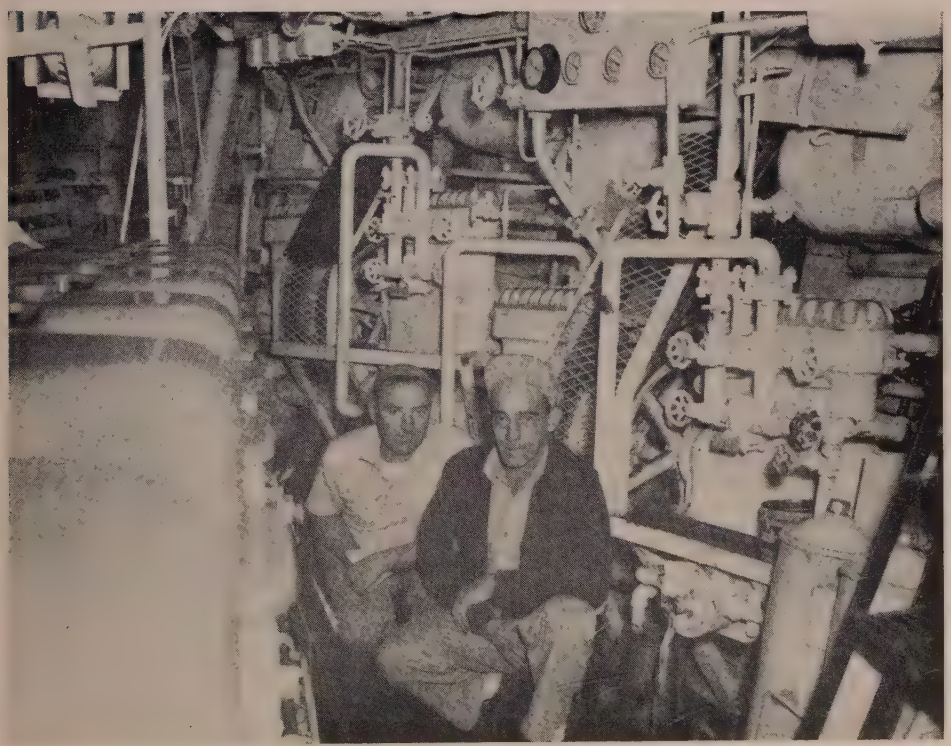
THE SUN JASON
Gloucester, Massachusetts

PROGRESS & PRODUCTION



Models AC-1 & D-2
Hallet Manufacturing Company

For 1953, Danforth Anchors anticipate no change in design or price. The Standard model is available from 2½ pounds to 21,000 pounds, and the Hi-Tensile, which holds considerably more for its weight, will be available from 5 pounds to 5,000 pounds.



"THE GOLDEN WEST"
Engine room with 4 Baker F-6-B Compressors

HOSE CUTS LOADING TIME FROM NET TO CARRIER

A rubber suction hose is getting sardines to act like flying fish off the coast of Maine these days.

It's a new wrinkle in the old art of commercial fishing. Fish use hose to zip through space. The hose cuts loading time from net to carrier by more than one-half.

Fishermen lower the hose by hand into fish-filled nets and then turn on a pump to develop suction within the hose. Sucked into the water stream thus created, sardines whiz through 30 feet of hose, uphill, from net to boat in rec-

ord time. A carrier ship can take on 65 tons of sardines an hour in this manner. Loading the same quantity by net, alone, takes three hours.

According to B. F. Goodrich, Akron, Ohio, manufacturer of the fish-handling hose, the hose measures six inches in diameter and has a soft rubber lining so that fish will not be bruised in passage. The mixture in the hose is about 80 per cent water to 20 per cent fish. One fleet of seven carrier vessels has furnished over-the-waves hose passage to 24,000,000 pounds of sardines.

Nearing shore, captive sardines get a chance to become hose-borne again. The cannery dock is equipped with the same type hose. Where once it took hours to shovel fish from carrier to dock, fish-handling hose now whisks boats clean of their cargoes in minutes. Result is that fish get to market sooner and boats spend more time away from docks, fishing.

Flow

(Continued from page 5)

FISHERIES MARKETING OUTLOOK

A prediction of fairly steady markets for edible fishery products during the fourth quarter of 1952 is made in the current *Quarterly Outlook for Marketing Fishery Products, October-December* 1952, Fishing Leaflet 336N issued by the Services Branch of Commercial Fisheries. The fourth quarter of 1952 will be a period of declining production, in line with the usual seasonal changes in the fisheries. However, the report forecasts heavy supplies of fishery products due to unusually large cold-storage holdings and increased importations. A weak market for by-products, except for fish meal, is predicted. Increased imports of edible fishery products are forecast, while exports are expected to be considerably less than in the fourth quarter of 1951.

The report forecasts a high level of general business activity and employment during the fourth quarter, with a consequent large consumer income and a heavy consumer demand for most commodities. An active market for foods is anticipated with very heavy supplies and probably slightly higher prices.

Production: The catch of fish and shellfish is expected to decline progressively during the fourth quarter but will not reach the seasonal low point until the early part of 1953. The major canning and by-products operations were concluded by the opening of the quarter. Although most fisheries will be in a declining phase for the balance of the year, some operations will increase their volume of production, particularly fisheries in the south.

Freezing and cold storage holdings: Stocks of edible fishery products in cold storage will increase until about the middle of the quarter, or possibly longer, but will then begin the seasonal decline which will carry through the spring of 1953.

Stocks of frozen fish and shellfish in cold storage warehouses, according to September 1, 1952, reports, showed holdings to be 11.5 per cent higher than a year ago. There was a reduction in the rate of freezings during August as compared with the same month last year. Largest holdings were for halibut, whiting, ocean perch (rosefish) fillets, cod fillets, haddock fillets, shrimp, and salmon. Major products in unusually large supply for the time of year were cod fillets, flounder and sole fillets, halibut, and haddock fillets. Stocks of whiting, shrimp and ocean perch fillets were below those of a year earlier but still considerably above the usual level for the time of year.

Stocks of salted and smoked fish in cold storage were considerably below those of a year ago. Both leading items —salt herring and mild-cured salmon— showed decreases.

Salt-Water Fish: An active or firm market is predicted for sablefish, croaker, and fresh and frozen mackerel. Other salt-water fish for which a steady or fairly steady market is forecast are bluefish, mullet, red snapper, salmon, scup, sea bass and sea trout. An unsettled market is anticipated for butterfish, haddock, halibut, swordfish and whiting. The market is expected to be dull for cod, flounder and sole, ocean perch and pollock.

Fresh-Water Fish: Fairly firm markets are forecast for catfish and bullheads, lake trout and yellow perch. An unsettled market is predicted for chubs, carp, lake herring, whitefish, pickerel and yellow pike, while the market for sheepshead is expected to be dull.

Shellfish: A firm or fairly firm market is predicted for clams, spiny lobster tails, and oysters, while markets

are expected to be steady or fairly steady for crabs, scallops, shrimp, and lobsters.

Canned Fish: Firm markets are predicted for canned mackerel and crab meat, and fairly steady markets for canned salmon and sardines. The markets for canned shrimp and herring are expected to be unsettled; those for canned tuna and oysters somewhat dull.

Salt-Fish: The markets for salt herring is expected to be steady and for mild-cured salmon fairly steady.

By-Products: A fairly steady market for fish meal, is forecast. The markets for the other by-products, fish oils, and fish-liver oils, however, are expected to be dull.

NEWFOUNDLAND FIRM

Fishing equipment entirely new to Newfoundland will soon be brought from Europe by a large St. John's firm, according to a dispatch by the American consulate at St. John's. This equipment will include herring trawls, midwater trawls, a nylon trawl (completely new to this province), as well as some German electric and hydraulic equipment for Danish seines and long-lining. A Norwegian and a British skipper have been brought to Newfoundland to demonstrate the uses for this equipment.

FISH MEAL AND OIL BULLETIN

Fish Meal and Oil Bulletin, July 1952, C.F.S. No. 785, contains information on fish meal and oil production in the U. S. and Alaska during July 1952, together with comparative data. Cumulative totals are given for the seven months ending July 1952, as compared with the same period for the previous year.

Production of fish oils (exclusive of liver oils) in the United States and Alaska during July 1952 amounted to 2,950,746 gallons, compared with 3,473,443 gallons during the same month in 1951. This was a decrease of 15 per cent as compared with July 1951. Menhaden oil production registered the greatest decrease (513,713 gallons) when compared with July 1951. Groundfish and Alaska herring oils also recorded a decrease during the month, while Maine herring, tuna, mackerel, and other oils registered gains over the same month in 1951.

The July production of fish meal and scrap by firms which normally account for about 91 per cent of the total output amounted to 37,205 tons as compared with 36,874 tons for the same period in 1951—an increase of 331 tons.

Copies of C.F.S. No. 785 are available free upon request from the Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C.

NORWEGIAN FROZEN FISHERY EXPORTS

Frozen Groundfish: Norwegian exporters of frozen groundfish fillets are finding an ever-increasing market in the Unites States, states an October 2 news item from the Norwegian Information Service. One cooperative sales organization reports that from January 1 to September 22, 1952, it exported to the U. S. groundfish fillet (cod, haddock, ocean perch, and ocean catfish) valued at 15:5 million kroner (U. S. $2,168,000).

Whale Meat: An official of a Norwegian export firm reports that his company exported 300 metric tons of frozen whale steaks to the United States in the summer of 1952. He believes that there are excellent prospects of increasing these exports, so long as the present high quality of the product is maintained. The latest item in this line to be offered on the American market is canned whale meat. Thinly sliced and smoked. it is suitable for hors d'oeuvres.

(Continued on page 14)

Sea

(Continued from page 4)

seas. The waters included within the group shall constitute inland waters.

Article 11
Straits

1. In straits which form a passage between two parts of the high sea, the limits of the territorial sea shall be ascertained in the same manner as on other parts of the coast, even if the same State is the coastal State of both shores.

2. When the width of the straits exceeds the breadth of the two belts of territorial sea, the waters between those two belts form part of the high sea. If the result of this delimitation is to leave an area of high sea not exceeding two miles in breadth surrounded by territorial sea, this area may be assimilated to territoial sea.

Article 12
Delimitation of the territorial sea at the mouth of a river

1. When a river flows directly into the sea, the waters of the river constitute inland water up to a line following the general direction of the coast drawn across the mouth of the river whatever its width.

2. If the river flows into an estuary, the rules applicable to bays apply to the estuary.

Article 13
Delimitation of the territorial sea of two adjacent States

The territorial sea of two adjacent States is normally delimited by a line every point of which is equidistant from the nearest point on the coastline of the two States.

CHAPTER III
Right of Passage
Article 14
Meaning of the right of passage

1. "Passage" means navigation through the territorial sea for the purpose either of traversing that sea without entering inland waters, or of proceeding to inland waters, or of making for the high seas from inland waters.

2. Passage is not **innocent** when a vessel makes use of the territorial sea of a coastal State for the purpose of doing any act prejudicial to the security, to the public policy or to the fiscal interests of that State.

3. Passage includes stopping and anchoring, but in so far only as the same are incidental to ordinary navigation or are rendered necessary by force majeure or by distress.

Article 15
Right of innocent passage through the territorial sea

1. A coastal State may put no obstacles in the way of the innocent passage of foreign vessels in the territorial sea.

2. It is bound to use the means at its disposal to safeguard in the territorial sea the principle of the freedom of maritime communication and not to allow such waters to be used for acts contrary to the rights of other States.

Article 16
Steps to be taken by the Coastal State

The right of passage does not prevent the coastal State from taking all necessary steps to protect itself in the territorial sea against any act prejudicial to the security, public policy or fiscal interests of the State, and, in the case of vessels proceeding to inland waters, against any breach of the conditions to which the admission of those vessels to those waters is subject.

Article 17
Duty of foreign vessels during their passage

1. Foreign vessels exercising the right of passage shall comply with the laws and regulations enacted in conformity with international usage by the coastal State, and, in particular, as regards:

(a) the safety of traffic and the protection of channels and buoys;

(b) the protection of the waters of the coastal State against pollution of any kind caused by vessels;

(c) the protection of the products of the territorial sea;

(d) rights of fishing, shooting and analogous rights belonging to the coastal State.

2. The Coastal State may not, however, apply these rules or regulations in such a manner as to discriminate between foreign vessels of different nationalities, nor save in matters relating to fishing and shooting, between national vessels and foreign vessels.

Article 18
Charges to be levied upon foreign vessels

1. No charge may be levied upon foreign vessels by reason only of their passage through the territorial sea.

2. Charges may only be levied upon a foreign vessel passing through the territorial sea as payment for specific services rendered to the vessel. These charges shall be levied without discrimination.

Article 19
Arrest on board a foreign vessel

1. A coastal State may not take any steps on board a foreign vessel passing through the territorial sea to arrest any person or to conduct any investigation by reason of any crime committed on board the vessel during its passage, save only in the following cases:

(a) if the consequences of the crime extend beyond the vessel; or

(b) if the crime is of a kind to disturb the peace of the country or the good order of the territorial sea: or

(c) if the assistance of the local authorities has been requested by the captain of the vessel or by the consul of the country whose flag the vessel flies.

2. The above provisions do not affect the right of the coastal State to take any steps authorized by its laws for the purpose of an arrest or investigation on board a foreign vessel lying in its territorial sea, or passing though the territorial sea after leaving the inland waters.

3. The local authorities shall in all cases pay due regard to the interests of navigation when making an arrest on board a vessel.

Article 20
Arrest of vessels for the purpose of exercising civil jurisdiction

1. A coastal State may not arrest or divert a foreign vessel passing through the territorial sea, for the purpose of exercising civil jurisdiction in relation to a person on board the vessel. A coastal State may not levy execution against or arrest the vessel for the purpose of any civil proceedings save only in respect of obligations or liabilities incurred by the vessel

itself in the course of or for the purpose of its voyage through the waters of the coastal State.

2. The above provisions are without prejudice to the right of the coastal State in accordance with its laws to levy execution against, or to arrest, a foreign vessel in the inland waters of the State or lying in the territorial sea, or passing through the territorial sea after leaving the inland waters of the State, for the purpose of any civil proceedings.

Article 21
Vessels employed in a governmental and non-commercial services

The provisions of articles 19 and 20 are without prejudice to the question of the treatment of vessels exclusively employed in a governmental and non-commercial service, and of the persons on board such vessels.

Article 22
Passage

1. As a general rule, a coastal State will not forbid the passage of foreign warships in its territorial sea and will not require a previous authorization or notification.

2. The coastal State has the right to regulate the conditions of such passage.

3. Submarines shall navigate on the surface.

4. Under no pretext, however, may there be any interference with the passage of warships through straits used for international navigation between two parts of the high seas.

Article 23
Non-observance of the regulations

If a foreign warship passing through the territorial sea does not comply with the regulations of the coastal State and disregards any request for compliance which may be brought to its notice, the coastal State may require the warship to leave the territorial sea.

Bait

(Continued from page 6)

counts. The number of gill rakers increases with the size of the fish, something which does not occur for the other two characters. Superficial examination indicates that the anchoveta from Panama and Ecuador may have less gill rakers than those from the northern range of the species. If, after complete analysis, such proves to be the case, it would tend to confirm what the fin ray counts already indicate, namely, that there are at least three separate population groups.

Nevertheless, we cannot be sure that there is not some inter-mixing of these anchoveta populations until we have conducted tagging experiments to trace migrations, because anatomical differences may result entirely or partially from environmental factors and these differences would not detect some migration between areas. Experiments have been completed at the Scripps Aquarium on a suitable anchoveta tag and we expect to undertake an extensive tagging experiment next year.

A new technique for distinguishing between races of a particular species by means of a chemical procedure known as paper chromatography is also under examination by scientists at Scripps Institute of Oceanography. The method has been very successful in work with plants and insects in identifying genetic types, and the feasibility of using it on fishes is under investigation. We are determining whether it can be used practically in our work with the bait species and the tunas. If successful, this new method will be much more rapid than the study of anatomical characters and more certain in its application.

Spawning Seasons

From examination of sexual organs of the specimens in the collections made by the clipper fleet, we find that the anchoveta spawns in most areas during the late fall and early winter, the majority of the fish spawning probably in December and January. It appears that they first spawn at age two years.

Information on the period of spawning was obtained by examining the gonads or reproductive organs. It is not easy to determine the sex of the anchovetaa before August. It is then that the gonads show signs of developing, after which they become increasingly larger during the fall months. Most fish appear to be spawned-out by February. First signs of development are observed somewhat earlier for fish from Guaymas and other northern baiting areas, which may indicate that these fish spawn earlier than those to the south, such as Fonseca and Panama.

(Continued on page 12)

Age and Growth

For commercially important fishes, a knowledge of their age and growth is essential. To be able to assign ages and to define rate of growth makes it possible to determine the relative size and strength of the various year classes available to the fishery. A fishery dependent on a few age groups or year classes is much more affected by the success or failure of spawning in any one year than if it operates on many age groups. Evidence suggests that the anchoveta fishery depends on only a small number of year classes.

Our present ideas about the growth of the anchoveta result from an examination of length frequency distributions. The length of each individual anchoveta in each of the collections brought back by the tuna boats is recorded. According to the locality and month in which the fish are caught, the frequency of each measurement is tabulated. These length frequencies can then be plotted graphically forming a distribution. A peak of the distribution is called a mode. One mode usually indicates one year class, two modes suggest two age groups, and so on, although at older ages the modes often run together and obscure one another.

Perhaps the method can be explained more clearly with an illustration. Length frequency distributions for the samples collected at Guaymas between May 1951 and May 1952 are shown in an accompanying graph. In May 1951, two age groups are indicated by the two modes having peaks about 125 and 140 millimeters, respectively. In July, the same two modes, while not as apparent because of the smaller number of fish available, are still present but are not sufficiently clear to demonstrate any increase in the length of the fish due to growth.

Without the data for May and July and the months following it, the October sample is too small to demonstrate anything. However, the frequency probably represents the first mode or age group which appeared in May and July. It has shifted to the right because the fish have grown during the intervening months.

The frequency distribution for February 1952 shows two modes. The first is a new age group entering the fishery for the first time, probably at age one year, and the second probably consists of two year olds with possibly some older fish also. The second group corresponds to the group which was present in October and which originated as the first mode in both May and July 1951. Both February groups appear again in March, April and May 1952, gradually shifting to the right in each succeeding month, indicating that the fish are growing. We can now see that the group designated as two year olds in February, has grown from about 125 mm. in May 1951 to approximately 145 mm. in May 1952. The two groups or modes, occurring in May 1951 and again one year later, fall in approximately the same position. This would seem to verify the conclusion that they correspond to age classes.

Our basis for labelling definite ages to the modes results from a critical examination of all the available length frequency distributions, not only from Guaymas, but also for the other baiting areas. The smallest anchovetas, so far collected, in January and February, fall into modes with peaks around 90 to 100 mm. From what is known about the growth of fishes belonging to the anchovy family, of which the anchoveta is one, we feel reasonably certain that groups of this size are one year old.

It follows that modes near 135 or 140 mm. in January represent fish two years old, and groups with fish of an average greater length represent fish three years old or more. The largest anchovetas we have seen in the collections have been 165 mm. What evidence we have on the age of the anchovetaas utilized for live bait suggests that those used in the greatest quantities are one and two years old.

As fish get older their growth slows down, so that the length frequency method is not useful beyond about two years. For older fish, other methods, such as reading marks on scales, are necessary. While annular marks on scales are used to determine the age of many different fishes in temperate regions, the method is not very helpful when applied to fishes from tropical waters, because conditions affecting growth and, therefore, growth itself are relatively constant throughout the year. In northern waters, growth is arrested during the winter, so that checks on the scales are formed which may be used in age determination. Some fishes grow very little during the spawning season, causing spawning checks to appear on the scales. Although we have examined a few anchoveta scales, the number and the meaning of the checks is not clear. However, we plan to examine the scales more critically to see if they can be used to tell age, together with the length measurements.

Studies in the Gulf of Nicoya

In February 1952, the Commission established a small laboratory at Puntarenas, a port on the Gulf of Nicoya, for the purpose of studying the life history of the bait fishes, and learning about their environment. The Gulf of Nicoya was, until about 1947 or 1948, one of the principal baiting locations for the tuna fleet, yielding large quantities of anchovetas. Since then, the clippers have not frequented the area because of a sudden decline in the anchoveta population.

Since February, two staff members at Puntarenas have been scouting the Gulf of Nicoya regularly to learn whether the anchoveta is entirely absent. They have seined beaches all around the Gulf, fished with gill nets, and sampled schools of bait with explosives. They have accompanied local boats fishing for shrimp in order to identify bait fishes caught in their trawl nets. So far, they have not come across a single anchovetaa. During March, two tuna clippers from San Diego scouted the Gulf for anchovetas but none were seen. All available evidence suggests that this fish is now entirely absent from Nicoya.

Little trouble is experienced in catching the other bait fishes, including the thread herring, the flat iron, and an anchovy closely related to the anchoveta, as well as other similar species, all of which are present in some numbers. Besides making studies of the life histories and distribution of the species present, observations are being made to determine, if possible, what might have brought about the disappearance of the anchoveta and whether the population can be re-established.

Hydrographic observations are being made in the Gulf of Nicoya at nine stations extending from Chira Island to the mouth. Water samples for salinity measurement, temperatures, and plankton samples are being taken at monthly intervals. Studies of temperature and salinity distributions from the surface to various depths are important in understanding the circulation of the water.

From the plankton samples are obtained the eggs and larvae of the bait fishes for the determination of their times of spawning and the development of the young. The plankton samples are also of potential value in elucidating geographical and seasonal variations in fertility of the waters, which is believed to be important to the production of the bait species.

We hope this discussion will serve further to acquaint the fishermen and the tuna industry generally with the work being undertaken by the Inter-American Tropical Tuna Commission, so far as research on the bait fishes is concerned. We know the Commission can count on continued cooperation to ensure the ultimate success of our work. Progressive minded people in the industry realize that the welfare and future development of the tuna fishery lies, to a great extent, in gaining a detailed knowledge of the resources. With the help of the industry, the Inter-American Tropical Tuna Commission proposes to obtain this knowledge.

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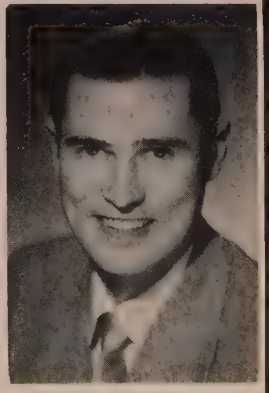


RAY DICKSON
Gen. Sales Mgr.

Flow

(Continued from page 10)

SHRIMP FISHING

A new Fishery Leaflet (No. 406), *Exploratory Shrimp Fishing in the Gulf of Mexico, 1950-51*, has been issued by the Service's Branch of Commercial Fisheries. This 35-page illustrated publication gives a brief account of developments in the Gulf of Mexico shrimp fishery and information on the activities of the Service's Exploratory Fishing Vessel *Oregon* in the Gulf of Mexico since July 1950. The purpose of the explorations during the latter half of 1950 and in 1951 was to locate concentrations of marketable shrimp outside the range of the existing fishery, to outline the extent of good shrimp-fishing areas and the seasons of best fishing in these areas, and to adapt or develop practical gear designs and methods to meet any new conditions found.

Copies of Fishery Leaflet No. 406 are now available without charge from the Division of Information, U. S. Fish and Wildlife Service.

NO CANNED SALMON

"Due to conditions prevailing in the Far East Command and because stocks on hand are sufficient to meet the needs of the Armed Forces during the next 12 months, the Army Quartermaster Corps does not plan to purchase any canned salmon from the 1952 pack," states a September 8 Department of Defense news release.

The announcement was made to inform industry of the Armed Forces' position in reference to its needs for canned salmon so that industry may plan accordingly. For the past several months, according to the release, troops in Korea have been supplied mostly with fresh foods. This reduced the requirement for canned foods—one of the chief components of operation rations which are served when fresh foods are not available.

Although the department announced that canned salmon is occasionally served with the fresh-food rations supplied to troops both overseas and in the Continental United States, it is expected that requirements through calendar year 1953 can be met from stocks on hand.

FOOD PROTECTION

The use of benzoic acid and sodium benzoate to protect food against spoilage caused by micro-organisms is described in a new booklet available from Monsanto Chemical Company's Organic Chemicals Division.

In addition to instructions and suggestions for the use of benzoic acid and sodium benzoate in preserving a variety of food products, the 10-page booklet contains an explanation of the causes of food spoilage and how benzoic acid and its soluble salt prevent it.

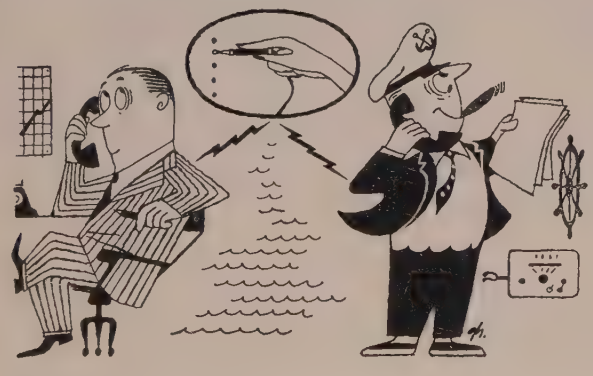
Also included is a summary of the investigations which showed that sodium benzoate is neither harmful to humans nor to the quality and nutritive value of foods as well as a guide for understanding the current federal and state laws covering the use of sodium benzoate as a preservative.

Because benzoic acid and its salts also have an inhibiting effect on the oxidation of oils, they have been found useful in the preservation of soap, adhesives, rubber and latex.

FISH FILLETS

Firms selling fresh and frozen fillets to the armed forces and other government agencies are not subject to the renegotiation act. The general counsel of the renegotiation board has ruled in answer to an inquiry;

". . . The provisions of Section 106 (A) (2) of the act exempt the sale of fish in its raw or natural state or beyond that up to the point where it is first customarily sold. Under the authority of Section 106 (D) (2) of the act the board, in addition, has exempted perishable subsistence supplies which include filleted fresh fish and frozen fish . . ."



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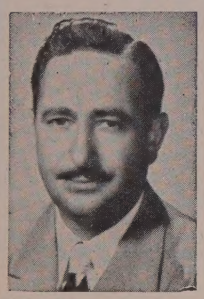

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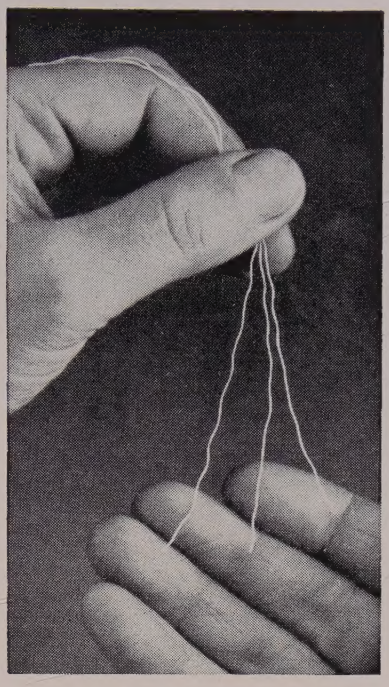

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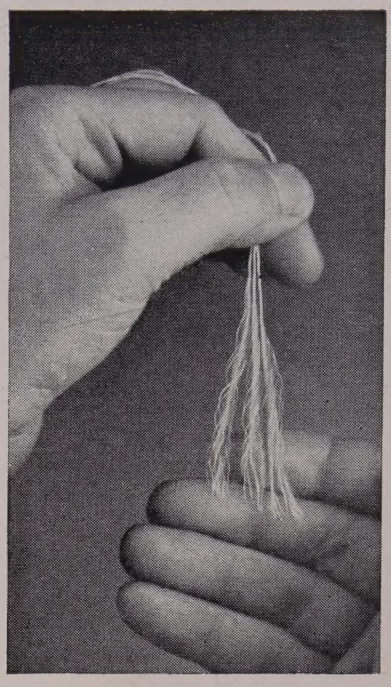

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WHAT more graphic proof than the eye of the camera to show you so convincingly that nets made of BONDED NYLOCK Nylon are completely free of any tendency to fray or fuzz. That's because NYLOCK Nylon's coating of a *specially patented* synthetic resin* BONDS the strands together —prevents any possibility of fraying or fuzziness to catch marine growth and cause deterioration of the net—to catch phosphorescence and warn the fish of the presence of the net. That's why *it's so important to* YOU to insist on nets made from BONDED NYLOCK Nylon!

IN ADDITION—NYLOCK *Nylon's special* BONDED *process* . . .

- prevents knot slippage . . . gives the nets less stretch
- strengthens the net and lengthens its life
- prevents discoloring
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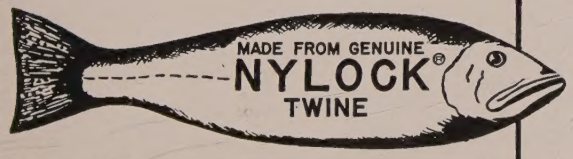

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